IN THE CLAIMS:

Please substitute the following claims for the same-numbered claims in the application:

1.   (Currently Amended) A computer implemented production planning method comprising:

identifying substitute components that can be used in place of original components in assemblies; and

providing restrictions on use of said substitute components to subsets of assemblies, such that a substitute component may be substituted for an original component in a first assembly and may not be substituted for said original component in a second assembly, wherein said restrictions allow for multiple substitutions of said substitute components for said original components in said first assembly; and, computing an optimal production plan in which said first assembly is produced with said multiple substitutions, wherein said plan is optimized for manufacturing efficiency.

2.   (Original) The method in claim 1, wherein said restrictions are based on one of client requirements and engineering constraints.

3.   (Canceled).

4.   (Original) The method in claim 1, wherein said substitute components perform the same function and are structurally different.

10/605,735   2

5.   (Canceled).

6.   (Currently Amended) A <u>computer implemented</u> production planning method comprising:

identifying substitute components that can be used in place of original components in assemblies;

providing restrictions on use of said substitute components to subsets of assemblies, such that a substitute component may be substituted for an original component in a first assembly and may not be substituted for said original component in a second assembly;

formulating said restrictions as mathematical expressions for each substitute component<u>, wherein said mathematical expressions allow for multiple substitutions of said substitute components for said original components in said first assembly</u>; ~~and~~

solving for optimum material substitutions using said mathematical expressions<u>;</u> <u>and,</u>

<u>computing an optimal production plan in which said first assembly is produced with said multiple substitutions, wherein said plan is optimized for manufacturing efficiency</u>.

7.   (Original) The method in claim 6, wherein said restrictions are based on one of client requirements and engineering constraints.

10/605,735   3

8. (Canceled).

9. (Original) The method in claim 6, wherein during said solving process said mathematical expressions set the quantity of substitutions to be no greater than a multiple of the number of associated assemblies.

10. (Original) The method of claim 6, wherein said mathematical expressions comprise linear mathematical expressions.

11. (Original) The method in claim 6, wherein said substitute components perform the same function and are structurally different.

12. (Canceled).

13. (Currently Amended) A computer implemented production planning method comprising:

identifying substitute components that can be used in place of original components in assemblies;

providing restrictions on use of said substitute components to subsets of assemblies, such that a substitute components may be substituted for an original component in a first assembly and may not be substituted for said original component in a second assembly;

formulating said restrictions as mathematical expressions for each substitute

10/605,735   4

component, wherein said mathematical expressions allow for multiple substitutions of said substitute components for said original components in said first assembly; and

combining mathematical expressions of components that have the same restrictions; and,

computing an optimal production plan in which said first assembly is produced with said multiple substitutions, wherein said plan is optimized for manufacturing efficiency.

14. (Original) The method in claim 13, wherein said restrictions are based on one of client requirements and engineering constraints.

15. (Canceled).

16. (Original) The method in claim 13, further comprising solving for optimum material substitutions using said mathematical expressions,

wherein during said solving process said mathematical expressions set the quantity of substitutions to be no greater than a multiple of the number of associated assemblies.

17. (Original) The method of claim 13, wherein said mathematical expressions comprise linear mathematical expressions.

18. (Original) The method in claim 13, wherein said substitute components perform

10/605,735   5

the same function and are structurally different.

19.   (Canceled).

20.   (Original) The method in claim 13, further comprising removing said restrictions for components that are acceptable to all assemblies.

21.   (Currently Amended) A computer implemented production/distribution planning method comprising:

identifying substitute part numbers that can be used in place of original part numbers;

providing restrictions on use of said substitute part numbers to subsets of customers, such that a substitute part number may be substituted for an original part number when used by a first customer and may not be substituted for said original part number when used by a second customer;

formulating said restrictions as mathematical expressions for each substitute part number; and

solving for optimum material substitutions using said mathematical expressions.

22.   (New) The method in claim 21, further comprising computing an optimal production plan in which said substitute part number is substituted for said original part number for said first customer, wherein said plan is optimized for manufacturing efficiency.

10/605,735   6

23. (New) The method of claim 21, wherein said restrictions are based on one of client requirements and engineering constraints.

24. (New) The method in claim 21, wherein said substitute part numbers perform the same function and are structurally different than said original part numbers.

25. (New) The method of claim 21, wherein said mathematical expressions comprise linear mathematical expressions.

26. (New) The method of claim 21, wherein said mathematical expressions allow for multiple substitutions of said substitute part numbers for said original part numbers.

27. (New) The method of claim 26, wherein said process of computing an optimal production plan further comprises computing an optimal production plan having said multiple substitutions to optimize manufacturing efficiency.

10/605,735   7